Arthroscopic Bankart Repair Rehabilitation Protocol

Dr. Pradeep Kodali

General Principles of Arthroscopic Bankart Repair Rehabilitation

Bankart labral repair rehabilitation is a structured, phased process. Progress is determined by both time and individual clinical milestones such as soft tissue healing, pain levels, and range of motion. This guide outlines a general framework; individual protocols may vary based on factors like tear size, tissue quality, and whether the injury is acute, chronic, or a revision.

General Rehabilitation Considerations

- Individualized Approach: Each patient's rehabilitation should be tailored based on pre-operative condition, surgical findings, and rate of recovery.
- Tear Size & Tissue Quality: Smaller tears and younger patients with good tissue quality may progress more quickly. Larger or massive tears require slower rehabilitation due to increased failure risk and motion limitations.
- Pain Monitoring: Pain should gradually decrease. Persistent or worsening pain may signal the need for modification in the rehab plan.
- Emphasis on Range of Motion (ROM): Early phases focus on restoring passive and active ROM before initiating strengthening.
- Quality of Movement: Exercise technique is critical. Avoid compensatory motions that can reinforce dysfunctional movement patterns.
- Tissue Healing Timeline: Healing of the tissue to bone takes approximately 12 weeks.
- Strengthening is generally delayed until this point to protect the repair.

Rehabilitation Protocol Phases for Bankart Repair

Phase I: Protection (Approx. Weeks 0-6)

- **Goals:**
  - Protect surgical repair.
  - Reduce swelling and minimize pain.
  - Maintain upper extremity (UE) ROM in the elbow, hand, and wrist.
  - Gradually increase shoulder Passive Range of Motion (PROM).
  - Minimize substitution patterns with Active Assistive Range of Motion (AAROM).
  - Minimize muscle inhibition and provide patient education.
- **Sling Use:**
  - Neutral rotation sling with an abduction pillow at 30-45 degrees abduction (Weeks 0-3).
  - Use the sling at night while sleeping.
  - Begin to wean out of the sling during Weeks 4-6.
- **Precautions:**
  - No shoulder AROM (Weeks 0-3).
  - No lifting objects (Weeks 0-6).
  - No supporting body weight with hands (Weeks 0-6).

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- **Interventions (Weeks 0-3):**
  - **Swelling Management:** Ice, compression.
  - **Range of Motion/Mobility:**
    - **PROM:** External Rotation (ER) <20° in the scapular plane, Forward elevation <90°, pendulums, seated GH flexion table slide.
    - **AROM:** Elbow, hand, wrist.
    - **AAROM:** Active assistive shoulder flexion, shoulder flexion with cane, cane external rotation stretch.
  - **Strengthening (beginning Week 2):** Periscapular exercises (scapular retraction, prone scapular retraction, standing scapular setting, supported scapular setting, inferior glide, low row), Ball squeeze.
- **Interventions (Weeks 4-6):**
  - Continue with previous Phase I interventions.
  - **Range of Motion/Mobility:**
    - **PROM:** ER <50° in the scapular plane, ER @ 90° Abduction (ABD) <45°, Forward elevation <135°, horizontal table slide.
    - **AAROM:** Washcloth press up, seated table slides, seated shoulder elevation with cane, wall climbs.
    - **AROM:** Elevation < 115°, supine flexion, salutes, supine punch, seated shoulder elevation with cane and active lowering.
  - **Strengthening:** Rotator cuff isometrics (internal and external rotation), Periscapular exercises (Row on physio ball, shoulder extension on physio ball, rowing, lawn mowers, robbery, serratus punches).
- **Criteria to Progress to Next Phase:**
  - Achieve 135° shoulder PROM forward elevation.
  - Achieve 50° shoulder PROM ER and Internal Rotation (IR) in the scapular plane.
  - Achieve 45° shoulder PROM ER in 90° ABD.
  - Achieve 115° shoulder AROM forward elevation.
  - Minimal substitution patterns with AAROM/AROM.
  - Pain < 2/10.
  - No complications with Phase II.

Phase II: Intermediate Phase (Approx. Weeks 7-12)

- **Goals:**
  - Do not overstress healing tissue.
  - Reduce swelling and minimize pain.
  - Gradually increase shoulder PROM/AROM.
  - Initiate and progress rotator cuff strengthening.
  - Progress periscapular strength.
  - Improve dynamic shoulder stability.
  - Gradually return to full functional activities.
- **Sling Use:** Discontinue sling (Week 6).
- **Precautions:** No lifting heavy objects (>10 lbs.).

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- **Interventions (Weeks 7-8):**
  - Continue with previous Phase I and II interventions.
  - **Range of Motion/Mobility:**
    - **PROM:** ER <65° scapular plane, ER @ 90° <75°, Forward elevation <155°.
    - **AAROM:** Pulleys.
    - **AROM:** Elevation <145°, supine forward elevation with elastic resistance to 90°.
  - **Strengthening:**
    - **Rotator Cuff:** Side-lying external rotation, standing external rotation w/ resistance band, standing internal rotation w/ resistance band, internal rotation, external rotation.
    - **Periscapular:** Resistance band shoulder extension, resistance band seated rows, push-up plus on knees, tripod, pointer, prone shoulder extension Is, resistance band forward punch, forward punch.
  - **Motor Control:** Internal and external rotation in scaption and Flex 90-125 (rhythmic stabilization), Quadruped alternating isometrics and ball stabilization on wall.
- **Interventions (Weeks 9-11):**
  - Continue with previous Phase II and III interventions.
  - **Range of Motion/Mobility:**
    - PROM: Full.
    - AROM: Full.
  - **Strengthening:**
    - **Rotator Cuff:** Sidelying ABD → standing ABD, scaption and shoulder flexion to 90° elevation.
    - **Periscapular:** T and Y, "T" exercise, push-up plus knees extended, prone external rotation at 90°, wall push up, "W" exercise, resistance band Ws, dynamic hug, resistance band dynamic hug.
    - **Elbow:** Biceps curl, resistance band bicep curls and triceps.
  - **Stretching:** IR behind back with towel, sidelying horizontal ADD, sleeper stretch, triceps and lats, doorjam series.
  - **Motor Control:** PNF – D1 diagonal lifts, PNF – D2 diagonal lifts, Field goals.
- **Criteria to Progress to Next Phase:**
  - Achieve full pain-free PROM and AROM.
  - Minimal to no substitution patterns with shoulder AROM.
  - Performs all exercises demonstrating symmetric scapular mechanics.
  - Pain < 2/10.

Phase III: Advanced Phase (Approx. Weeks 12-16)

- **Goals:** Maintain pain-free ROM, enhance functional use of upper extremity.
- **Interventions:** Continue with previous phase interventions, progressing as tolerated.

  - **Strengthening:**
    - **Rotator Cuff:** External rotation at 90°, internal rotation at 90°, resistance band standing external rotation at 90°, resistance band standing internal rotation at 90°.
  - **Motor Control:** Resistance band PNF pattern, PNF – D1 diagonal lifts w/ resistance, diagonal-up, diagonal-down, Wall slides w/ resistance band.
  - **Stretching:** External rotation (90° abduction), hands behind head.
- **Criteria to Progress to Return to Sport Phase:**
  - Clearance from the Medical Doctor (MD) and ALL milestone criteria below have been met.
  - Milestone Criteria (Upper Extremity Functional Assessment):
    - Full pain-free PROM and AROM.
    - Joint position sense ≤ 5 degree margin of error (assessed for both mid-range and end-range).
    - Strength ≥ 85% of the uninvolved arm (including External rotation, Internal rotation, Middle Trapezius, and Lower Trapezius strength measured with a handheld dynamometer).
    - ER/IR ratio ≥ 64%.
    - Scapula Dyskinesis Test symmetrical.
    - Functional Performance and Shoulder Endurance Tests ≥ 85% of the uninvolved arm, including:
      - Upper Quarter Y-Balance.
      - Closed Kinetic Chain Upper Extremity Stability Test (CKCUEST) (Males ≥ 21 taps; females ≥ 23 taps).
      - Single Arm Seated Shot-Put Test.
      - Posterior Shoulder Endurance Test.
    - Negative impingement and instability signs.
    - Performs all exercises demonstrating symmetric scapular mechanics.

Phase IV: Return to Sport/Activity (Approx. Weeks 16-24 / 4-6 Months)

- **Goals:** Maintain pain-free ROM, continue strengthening and motor control exercises, enhance functional use of upper extremity, and achieve gradual return to strenuous work/sport activity.
- **Interventions:** Continue with previous phase interventions, progressing as tolerated.
  - Specific return-to-sport/throwing program activities should be coordinated with the physician.

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Criteria for Discharge from Rehabilitation

- **Discharge is generally met when the patient achieves:**
  - ROM within appropriate ranges based on patient-specific needs.
  - Full muscle strength and endurance of shoulder and periscapular strength.
  - Consistently low pain scores.

Return to Sport Criteria

- **Return-to-Sport Considerations:**
  - The decision to return to sport should be individualized for recreational or competitive athletes.
  - Factors such as the level of demand on the upper extremity, whether it's a contact vs. non-contact sport, and the frequency of participation should be considered.
  - Close discussion with the referring surgeon is highly encouraged before advancing to a return-to-sport rehabilitation program.
- **To return to sport or activity, the following criteria should be met:**
  - ROM appropriate for the specific sport or activity.
  - Strength of shoulder and scapular musculature tested at 5/5 Manual Muscle Test (MMT) or isokinetics compared to the uninvolved side.
  - Completion of a closed chain functional measurement, such as the Closed Kinetic Chain Upper Extremity Strength Test (CKCUEST).
  - Completion of a progressive return to sport/throwing program.
  - No pain with activity.